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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Remy Collier

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EXAMINER

KRYLOVA, IRINA

ART UNIT

PAPER NUMBER

1796

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,264	Applicant(s) COLLIER ET AL.	
	Examiner Irina Krylova	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/27/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 3 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
2. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 3 and 8 recites the broad recitation of the ratio of styrene to the divinylbenzene being between 4 and 1, and the

Art Unit: 1796

claim also recites the ratio of being equal to 1 which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hird et al** (US 2003/0091610).

4. Hird et al discloses an open-celled polymeric foam (as to instant claims 1-5) made from high internal phase emulsions (Abstract), wherein HIPE foams are prepared via polymerization comprising a discontinuous water phase and a continuous oil phase ([0050]). The polymerized monomers comprise styrenic and divinylbenzene monomers; the foam comprises a density of 0.01-0.03 g/cc ([0092]) and cell diameter of 5-130 microns, alternatively 10-50 microns ([0090]).

5. As to instant claim 4, the oil phase comprises:

A) 20-95%wt of substituted C4-C12 styrenics (as to instant claim 9, cited in [0052]);

Art Unit: 1796

B) 5-80%wt of a crosslinking agent comprising divinylbenzene (as to instant claims 2, 7, cited in [0053]);

C) 0-70%, alternatively 15-40%wt, of styrene ([0054]).

All ranges of the components in the foam of **Hird et al** overlap with the ranges of the corresponding components in the foam claimed in the instant invention. It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974)

6. Claims 6-13, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hird et al** (US 2003/0091610) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855).

7. The discussion with respect to **Hird et al** set forth in paragraphs 3-5 above is incorporated here by reference.

8. Hird et al further discloses a process for producing the foam comprises (as to instant claim 6-8):

- 1) forming a stable high internal phase emulsion of an oil phase and an aqueous phase having the ratio between aqueous and oil phase ranging between 8:1 to 140:1 ([0072]);
- 2) polymerizing and curing the stable emulsion under conditions suitable for forming cellular polymeric structure at above 50°C, alternatively above about 65°C (as to instant claim 16, cited in [0078]);
- 3) compressing and washing the cellular polymeric structure ([0070]);

wherein:

the oil phase comprises:

- A) 20-95%wt of substituted C4-C12 styrenics (as to instant claim 9, cited in [0052]);
- B) 5-80%wt of a crosslinking agent comprising divinylbenzene (as to instant claims 7, cited in [0053]);
- C) 0-70%, alternatively 15-40%wt, of styrene ([0054]);
- D) 1-20% of emulsifier comprising SPAN 80, i.e. sorbitan monooleate (as to instant claim 10, cited in [0057], [0059]);

the aqueous phase comprises:

- a) 0.2-40%wt of an electrolyte comprising trivalent inorganic salts such as sulfates (as to instant claims 11-12, cited in [0067]);
- b) 0.001-10%mol of sodium persulfate (as to instant claim 13, cited in [0068]).

Art Unit: 1796

9. As to instant claim 17, the washing step comprises several (2-4 cycles) compressing and washing steps, including washing with ethanol ([0081]-[0083]).

10. The open cell foam of **Hird et al** is used for making pharmaceutical compositions for weight control ([0015]).

11. As to instant claim 11, though **Hird et al** does not explicitly states the use of aluminum sulphate as an electrolyte, however, since **Hird et al** specifies the use of trivalent inorganic salts such as sulfates, therefore, it would have been obvious to a one of ordinary skill in the art to use the aluminum, as a trivalent metal, in the sulphate salt as well. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045). Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

12. **Hird et al** fails to teach the use of ethylbenzene solvent and the drying step comprising drying with supercritical carbon dioxide.

Art Unit: 1796

13. Catalfamo et al discloses a HIPE polymerization process for making foams wherein the ratio of water to oil phase is 4:1 to 250:1, and wherein the oil phase comprises benzene, toluene and xylene (col. 3, lines 33-62).

14. Though ethylbenzene is not explicitly stated by **Catalfamo et al** as the used oily material, nevertheless, since **Catalfamo et al** recites the use of xylene as an oily material, and it is known in the art that 1) both ethylbenzene and xylene are used as oil phase in water-in-oil emulsions for making drugs for their intoxicating properties (see col. 5, lines 48-60 in **Lin et al**); 2) ethylbenzene is a constituent usually present in xylene solvent and 3) it is known in the art that ethylbenzene is used as a solvent in internal phase water in oil emulsions (see col. 5, lines 60-65 in **Cawiezel et al**), therefore, it would have been obvious to a one of ordinary skill in the art to use the ethylbenzene as a solvent in oily material in the HIPE of **Hird et al** as well.

15. Ko et al discloses a method for making high internal phase emulsion foam(HIPE), wherein after the polymerization reaction, the remaining components of the oil phase may be removed after polymerization by washing with a volatile organic solvent and extraction with supercritical carbon dioxide ([0044]) to produce a foam having improved fluid intake rate (see [0005]).

16. Since

Art Unit: 1796

1) **Hird et al** discloses a process for producing the foam comprising forming a stable high internal phase emulsion of an oil phase and an aqueous phase; polymerizing and curing the stable emulsion under conditions suitable for forming cellular polymeric structure at above 50°C, alternatively above about 65°C and compressing and washing the cellular polymeric structure to remove the residual materials, but fails to teach the use of supercritical carbon dioxide removing the residual materials;

2) **Ko et al** discloses a method for making high internal phase emulsion foam(HIPE), wherein after the polymerization reaction, the remaining components of the oil phase may be removed after polymerization by washing with a volatile organic solvent and extraction with supercritical carbon dioxide ([0044]) to produce a foam having improved fluid intake rate (see [0005]),
therefore,

it would have been obvious to a one of ordinary skill in the art at the time of the invention was made, to apply washing with a volatile organic solvent and extraction with supercritical carbon dioxide step of **Ko et al** in the process of **Hird et al**, to improve the extraction of residual materials in the foam and to produce the foam having improved fluid intake rate (see **Ko et al** [0005]).

17. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hird et al** (US 2003/0091610) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US

Art Unit: 1796

5,948,855), as applied to claim 6, in further view of **Sasabe et al** (US 2003/0036575), as evidenced by Lenntech/deionized water flyer.

18. The discussion with respect to **Hird et al** (US 2003/0091610) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) set forth in paragraphs 6-16 above, is incorporated here by reference.

19. **Hird et al** in view of **Catalfamo et al** and **Ko et al** fail to specify the used water as ultrapure and having resistivity of 16.2 megaohms.

20. **Sasabe et al** discloses a HIPE polymerization process of styrene and divinylbenzene monomers in the presence of sorbitan monooleate emulsifier, wherein the aqueous phase comprises sodium persulphate initiator (Abstract). The water used in the aqueous phase comprises a deionized water ([0087]).

21. Though **Sasabe et al** does not specify the resistivity of deionized water, however, it is known in the art that deionized water is a very high purity water wherein theoretically 100% of salts can be removed (see p. 1 in Lenntech/deionized water flyer). The deionized water can have a resistivity of 10-18 megaohm (see Table on p.4 of Lenntech/deionized water flyer).

22. Since

Art Unit: 1796

1) **Hird et al** in view of **Catafamo et al** and **Ko et al** disclose a low density foam produced by HIPE polymerization, but fail to specify the used water as ultrapure and having resistivity of 16.2 megaohms;

2) **Sasabe et al** discloses a HIPE polymerization process of styrene and divinylbenzene monomers in the presence of sorbitan monooleate emulsifier, wherein the aqueous phase comprises sodium persulphate initiator in deionized water (col. 8, lines 20-26); therefore,

it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to used a deionized water in the HIPE polymerization process of **Hird et al** in view of **Catafamo et al** and **Ko et al** to produce a HIPE foam with lower content of impurities.

23. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hird et al** (US 2003/0091610) in view of **Catafamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855), as applied to claim 6, in further view of **Mork et al** (US 6,303,834).

24. The discussion with respect to **Hird et al** (US 2003/0091610) in view of **Catafamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) set forth in paragraphs 6-16 above, is incorporated here by reference.

Art Unit: 1796

25. Hird et al in view of **Catalfamo et al** and **Ko et al** fail to specify the trivalent metal sulphate salt used as an electrolyte, being an aluminum sulfate.

26. Mork et al discloses a process for producing an open-cell foam by HIPE polymerization of styrene, divinylbenzene, wherein the used electrolyte comprises halides and sulfates of aluminum, lithium and magnesium (col. 4, lines 13-33).

27. Since

1) **Hird et al** in view of **Catalfamo et al** and **Ko et al** disclose a low density foam produced by HIPE polymerization, but fail to specify the trivalent metal sulphate electrolyte being an aluminum sulphate;

2) Mork et al discloses a process for producing an open-cell foam by HIPE polymerization of styrene, divinylbenzene, wherein the used electrolyte comprises halides and sulfates of aluminum, lithium and magnesium (col. 4, lines 13-33); therefore,

it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to use aluminum sulphate as a electrolyte in the HIPE polymerization process of **Hird et al** in view of **Catalfamo et al** and **Ko et al** as well, as it would have been obvious to substitute one equivalent for another used for the same purpose (see MPEP 2144.06 II).

Art Unit: 1796

28. Claims 1-13, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **DesMarais et al** (US 5,331,015) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855).

29. DesMarais et al discloses an open-cell foam (as to instant claims 1-5) prepared by polymerizing HIPE water-in-oil emulsions (Abstract), wherein the cell diameter comprises 5-100 microns (col. 10, lines 43-49); and the density of foam is 0.01-0.08 g/cc (col. 9, lines 48-60).

30. The foam is prepared by the process comprising:

- 1) combining an oil phase with water phase at a weight ratio of water phase to oil phase of 12:1 to 100:1 (col. 22, lines 25-30), subjecting the mixture to agitation;
- 2) polymerizing the emulsion at a temperature of 55-90C (as to instant claim 16, cited in col. 23, lines 35-40);
- 3) washing and dewatering the foam comprising washing with water or other aqueous washing solutions in several washing steps (col. 23-24).

31. The oil phase comprises:

- A) 3-41%wt of a glassy monomer comprising styrene (as to instant claim 9, cited in col. 17, lines 5-14);
- B) 27-73%wt of a rubbery monomer comprising butadiene;

Art Unit: 1796

C) 8-30%wt of a crosslinking monomer comprising divinylbenzene (col. 17, line 65)

D) 2-33% of an emulsifier comprising sorbitan monooleate (as to instant claim 10, cited in col. 18, lines 45-50);

E) a water insoluble solvent (col. 19, lines 1-6).

32. The aqueous phase comprises:

a) 0.2-40%wt of an electrolyte comprising trivalent inorganic salts such as sulfates (as to instant claims 11-12, cited in col. 19, lines 30-45);

b) 0.001-0.5%mol of sodium persulphate (as to instant claim 13, cited in col. 19, lines 45-60).

33. All ranges of the components in the foam of **DesMarais et al** overlap with the ranges of the corresponding components in the foam claimed in the instant invention. It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974)

Art Unit: 1796

34. As to instant claim 11, though **DesMarais et al** does not explicitly states the use of aluminum sulphate as an electrolyte, however, since **DesMarais et al** specifies the use of trivalent inorganic salts such as sulfates, therefore, it would have been obvious to a one of ordinary skill in the art to use the aluminum, as a trivalent metal, in the sulphate salt as well. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045). Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

35. **DesMarais et al** fails to teach the use of ethylbenzene solvent and the drying step comprising drying with supercritical carbon dioxide.

36. **Catalfamo et al** discloses a HIPE polymerization process for making foams wherein the ratio of water to oil phase is 4:1 to 250:1, and wherein the oil phase comprises benzene, toluene and xylene (col. 3, lines 33-62).

37. Though ethylbenzene is not explicitly stated by **Catalfamo et al** as the used oily material, nevertheless, since **Catalfamo et al** recites the use of xylene as an oily material, and it is known in the art that 1) both ethylbenzene and xylene are used as oil

Art Unit: 1796

phase in water-in-oil emulsions (see col. 5, lines 48-60 in **Lin et al**); 2) ethylbenzene is a constituent usually present in xylene solvent and 3) it is known in the art that ethylbenzene is used as a solvent in internal phase water in oil emulsions (see col. 5, lines 60-65 in **Cawiezel et al**), therefore, it would have been obvious to a one of ordinary skill in the art to use the ethylbenzene as a oily material in the HIPE of **DesMarais et al** as well.

38. Ko et al discloses a method for making high internal phase emulsion foam(HIPE), wherein after the polymerization reaction, the remaining components of the oil phase may be removed after polymerization by washing with a volatile organic solvent and extraction with supercritical carbon dioxide ([0044]) to produce a foam having improved fluid intake rate (see [0005]).

39. Since

1) **DesMarais et al** discloses a process for producing the foam comprising forming a stable high internal phase emulsion of an oil phase and an aqueous phase; polymerizing and curing the stable emulsion under conditions suitable for forming cellular polymeric structure and compressing and washing the cellular polymeric structure to remove the residual materials, but fails to teach the use of supercritical carbon dioxide removing the residual materials;

2) Ko et al discloses a method for making high internal phase emulsion foam(HIPE), wherein after the polymerization reaction, the remaining components of the oil phase

Art Unit: 1796

may be removed after polymerization by washing with a volatile organic solvent and extraction with supercritical carbon dioxide ([0044]) to produce a foam having improved fluid intake rate (see [0005]),

therefore,

it would have been obvious to a one of ordinary skill in the art at the time of the invention was made, to apply washing with a volatile organic solvent and extraction with supercritical carbon dioxide step of **Ko et al** in the process of **DesMarais et al**, to improve the extraction of residual materials in the foam and to produce the foam having improved fluid intake rate (see **Ko et al** [0005]).

40. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **DesMarais et al** (US 5,331,015) in view of **Catafamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855), as applied to claim 6, in further view of **Sasabe et al** (US 2003/0036575), as evidenced by Lenntech/deionized water flyer.

41. The discussion with respect to **DesMarais et al** (US 5,331,015) in view of **Catafamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) set forth in paragraphs 28-39 above, is incorporated here by reference.

Art Unit: 1796

42. DesMarais et al in view of **Catalfamo et al** and **Ko et al** fail to specify the used water as ultrapure and having resistivity of 16.2 megaohms.

43. Sasabe et al discloses a HIPE polymerization process of styrene and divinylbenzene monomers in the presence of sorbitan monooleate emulsifier, wherein the aqueous phase comprises sodium persulphate initiator (Abstract). The water used in the aqueous phase comprises a deionized water ([0087]).

44. Though **Sasabe et al** does not specify the resistivity of deionized water, however, it is known in the art that deionized water is a very high purity water wherein theoretically 100% of salts are removed (see p. 1 in Lenntech/deionized water flyer). The deionized water can have a resistivity of 10-18 megaohm (see Table on p.4 of Lenntech/deionized water flyer).

45. Since

1) **DesMarais et al** in view of **Catalfamo et al** and **Ko et al** disclose a low density foam produced by HIPE polymerization, but fail to specify the used water as ultrapure and having resistivity of 16.2 megaohms;

2) **Sasabe et al** discloses a HIPE polymerization process of styrene and divinylbenzene monomers in the presence of sorbitan monooleate emulsifier, wherein the aqueous phase comprises sodium persulphate initiator in deionized water (col. 8, lines 20-26);

Therefore,

Art Unit: 1796

It would have been obvious to a one of ordinary skill in the art at the time of the invention was made to used a deionized water in the HIPE polymerization process of **DesMarais et al** in view of **Catalfamo et al** and **Ko et al** to produce a HIPE foam with lower content of impurities.

46. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **DesMarais et al** (US 5,331,015) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) and **Lin et al** (US 5,948,855), as applied to claim 6, in further view of **Mork et al** (US 6,303,834).

47. The discussion with respect to **DesMarais et al** (US 5,331,015) in view of **Catalfamo et al** (US 6,369,121) and **Ko et al** (US 2003/0134918), as evidenced by **Cawiezel et al** (US 5,633,220) set forth in paragraphs 28-39 above, is incorporated here by reference.

48. DesMarais et al in view of **Catalfamo et al** and **Ko et al** fail to specify the trivalent sulphate electrolyte being aluminum sulfate.

49. Mork et al discloses a process for producing an open-cell foam by HIPE polymerization of styrene, divinylbenzene, wherein the used electrolyte comprises halides and sulfates of aluminum, lithium and magnesium (col. 4, lines 13-33).

Art Unit: 1796

50. Since

1) **DesMarais et al** in view of **Catalfamo et al** and **Ko et al** disclose a low density foam produced by HIPE polymerization, but fail to specify the trivalent metal sulphate electrolyte being an aluminum sulphate;

2) **Mork et al** discloses a process for producing an open-cell foam by HIPE polymerization of styrene, divinylbenzene, wherein the used electrolyte comprises halides and sulfates of aluminum, lithium and magnesium (col. 4, lines 13-33); therefore,

it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to use aluminum sulphate as a electrolyte in the HIPE polymerization process of **DesMarais et al** in view of **Catalfamo et al** and **Ko et al** as well, as it would have been obvious to substitute one equivalent for another used for the same purpose (see MPEP 2144.06 II).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina Krylova whose telephone number is (571)270-7349. The examiner can normally be reached on Monday-Friday 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Irina Krylova/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796